

What is claimed is:

1. A system for providing therapy to a patient's brain in response to a detected event, the system comprising:

a therapy delivery mechanism coupled to at least one therapy delivery site in the patient's brain;

a detection subsystem coupled to at least one detection electrode in the patient's brain, wherein the detection subsystem is operative to receive and process a detected signal received by the detection electrode; and

a processor operative to identify a detected event in the detected signal and to cause the therapy delivery mechanism to apply a dose of therapy in response thereto;

wherein the detection electrode is situated in a first brain region and the at least one therapy delivery site is situated in at least one different second brain region.

2. The method of claim 1, wherein the therapy delivery mechanism comprises a stimulation subsystem.

3. The system of claim 1, wherein the at least one therapy delivery site comprises a plurality of locations in the patient's brain.

4. The system of claim 3, wherein the therapy delivery mechanism is adapted to deliver a plurality of therapies to the plurality of locations.

5. The system of claim 4, wherein the plurality of therapies comprises a plurality of bursts of electrical stimulation, at least one burst for each location of the plurality of locations.

6. The system of claim 5, wherein the bursts of electrical stimulation have different stimulation parameters.

7. The system of claim 5, wherein the bursts of electrical stimulation have equivalent stimulation parameters.

8. A method for responsively treating a neurological disorder in a patient with therapy applied to the patient's brain, the method comprising the steps of:

receiving a signal representative of a neurological event with a detection electrode implanted in a first region of the patient's brain;

transmitting the signal to a detection subsystem, wherein the detection subsystem is adapted to receive and process the signal received by the detection electrode;

identifying a neurological event representative of the neurological disorder with a processor coupled to the detection subsystem;

in response to the neurological event, causing a therapy delivery mechanism to apply a dose of a therapy to at least one therapy delivery site in at least one second region of the patient's brain.

9. The method of claim 8, wherein the at least one therapy delivery site comprises a plurality of locations in the patient's brain, and wherein the step of causing the therapy delivery mechanism to apply a dose of a therapy comprises applying a plurality of therapies to the plurality of locations, at least one therapy for each of the plurality of locations.